

# **PERMANENT MAGNET TYPE ROTOR AND PERMANENT MAGNET TYPE ROTARY ELECTRICAL MACHINE**

## Abstract of Disclosure

A number of embodiments of rotating electrical machines using permanent magnets wherein the cogging torque is substantially reduced as are vibrations caused by magnetic flux variations. This is accomplished by disposing the coil windings in equal circumferential spacing and disposing the associated permanent magnets in non-symmetrical relationship so that the gaps between some of the magnets are different. In addition, the coil windings are such that no two coils of any phase are immediately adjacent each other in a circumferential direction. A method for calculating the optimum spacing is also disclosed.